

WHAT IS CLAIMED IS:

1 1. A method for fabricating a sensor on a substrate having a pair of
2 electrodes, said method comprising:
3 depositing a first layer of conducting material onto said substrate having a
4 pair of electrodes; and
5 depositing a second layer of polymer film onto said first layer of
6 conducting material thereby fabricating said sensor.

1 2. The method according to claim 1, wherein said conducting material
2 comprises carbon black.

1 3. The method according to claim 1, wherein said deposition of said
2 conducting material is by aerosol spraying.

1 4. The method according to claim 2, further comprising drying said
2 carbon black before deposition of said second layer.

1 5. The method according to claim 2, wherein said carbon black layer
2 has a thickness between about 0.01 micron to about 10 microns.

1 6. The method according to claim 5, wherein said carbon black layer
2 has a thickness between about 0.1 micron to about 1 micron.

1 7. The method according to claim 1, further comprising depositing
2 said first layer of conducting material through a mask.

1 8. The method according to claim 7, wherein said mask comprises a
2 plurality of apertures.

1 9. The method according to claim 1, wherein said deposition of said
2 first layer of conducting material comprises robotic amateur.

1 10. The method according to claim 1, wherein said deposition of said
2 second layer of said polymer film comprises robotic amateur.

1 11. The method according to claim 1, further comprising depositing
2 said second layer of polymer film through a mask.

1 12. The method according to claim 11, wherein said mask comprises a
2 plurality of apertures.

1 13. The method according to claim 1, further comprising processing
2 said second layer of polymer film after depositing upon said first layer of conducting
3 material.

1 14. The method according to claim 13, wherein said processing is a
2 member selected from the group consisting of vacuum processing, photo-active
3 polymerization and cross-linking.

1 15. The method according to claim 1, wherein said sensor is an array
2 of sensors having a first sensor and a second sensor.

1 16. The method according to claim 15, wherein said first sensor is
2 compositionally different than said second sensor.

1 17. The method according to claim 15, wherein said first sensor has a
2 different polymer film layer than said second sensor.

1 18. The method according to claim 1, wherein said substrate comprises
2 a dielectric material.

1 19. The method according to claim 1, wherein said substrate further
2 comprises a member selected from the group consisting of a heater, a thermistor and a
3 combination thereof.

1 20. The method according to claim 1, wherein said substrate further
2 comprises a member selected from the group consisting of a temperature probe, humidity
3 probe and a combination thereof.

1 21. A method for fabricating a sensor on a substrate having a pair of
2 electrodes, said method comprising:
3 depositing a first layer of conducting material onto said substrate having a
4 pair of electrodes to form a substrate having a conducting material disposed thereon;
5 processing said substrate having a conducting material disposed thereon to
6 remove any solvent;

7 depositing a second layer of polymer film onto said first layer of
8 conducting material to form a fabricated sensor; and
9 processing said fabricated sensor to cure said second layer of polymer
10 film.

1 22. The method according to claim 21, wherein said sensor is an array
2 of sensors.

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